

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-21. (canceled).

22. (previously presented): A method for making a dry plating built-up, comprising the steps of:

providing silicon carbide as a starting source, and subjecting the silicon carbide to dry plating while changing a concentration of a reactive gas continuously or intermittently, thereby depositing and forming, on a substrate, a thin film having different refractive indices which changes in a wave form selected from a triangular wave and sine wave in the thickness direction thereof.

23.-25. (canceled).

26. (currently amended): A method according to claim 24, A method for controlling a refractive index of dry plating film which comprises the steps of:

providing silicon carbide as a starting source consisting essentially of a silicon carbide sintered product which is obtained by sintering a homogeneous mixture having a density of 2.9g/cm³ or over and made of silicon carbide powder and a non-metallic sintering aid; and

subjecting the silicon carbide to dry plating while controlling a concentration of a reactive gas including a nitrogen-containing gas thereby forming a thin film, on the substrate, made primarily of silicon carbide and having a refractive index ranging from 1.4 to 2.8,
wherein the thin film formed on the substrate, made primarily of silicon carbide,
comprises SiC_xN_y , wherein $x > 0$ and $y > 0$, and

wherein the refractive indices of said thin film changes in a rectangular wave form in the thickness direction thereof.

27. (currently amended): A method according to claim 24, A method for controlling a refractive index of dry plating film which comprises the steps of:
providing silicon carbide as a starting source consisting essentially of a silicon carbide sintered product which is obtained by sintering a homogeneous mixture having a density of 2.9g/cm³ or over and made of silicon carbide powder and a non-metallic sintering aid; and
subjecting the silicon carbide to dry plating while controlling a concentration of a reactive gas including a nitrogen-containing gas thereby forming a thin film, on the substrate, made primarily of silicon carbide and having a refractive index ranging from 1.4 to 2.8,
wherein the thin film formed on the substrate, made primarily of silicon carbide,
comprises SiC_xN_y , wherein $x > 0$ and $y > 0$, and

wherein the refractive indices of said thin film changes in a triangular wave form in the thickness direction thereof.

28. (currently amended): ~~A method according to claim 24,~~ A method for controlling a refractive index of dry plating film which comprises the steps of:

providing silicon carbide as a starting source consisting essentially of a silicon carbide sintered product which is obtained by sintering a homogeneous mixture having a density of 2.9g/cm³ or over and made of silicon carbide powder and a non-metallic sintering aid; and

subjecting the silicon carbide to dry plating while controlling a concentration of a reactive gas including a nitrogen-containing gas thereby forming a thin film, on the substrate, made primarily of silicon carbide and having a refractive index ranging from 1.4 to 2.8,

wherein the thin film formed on the substrate, made primarily of silicon carbide, comprises SiC_xN_y, wherein x > 0 and y > 0, and

wherein the refractive indices of said thin film changes in a sine wave form in the thickness direction thereof.